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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
FLETCHER III, WILLIAM P	

ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 09/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/613,198	XING ET AL.	
	Examiner	Art Unit	
	William P. Fletcher III	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 July 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/8/03 & 10/14/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the CROSS-REFERENCE TO RELATED APPLICATIONS should be updated to reflect that 09/863,552 has issued as US 6,610,388 B2.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claims 1-4, 6, 7, 8, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miklasiewicz et al. (US 6,326,415 B1) in view of DeClercq et al. (US 5,672,392 A).**

Miklasiewicz teaches a process for making an ink-jet recording medium comprising applying a radiation-curable coating, comprising a radiation-curable oligomer and photoinitiator, to the surface of a substrate material; irradiating the radiation curable coating with either UV light or e-beam radiation to cure it; treating the cured coating with a corona discharge; and applying an ink-receptive coating there-over to yield an ink-jet recording medium having a surface gloss of greater than 55, which reads on applicant's claimed gloss "of at least 70" in claim 1 and "in the range of 20 to 70" in claim 12. See abstract; 2:54-3:10; 3:15, 40-65; 4:25-5:42; and Examples).

This reference teaches the production of a single sheet, but doe not explicitly teach that the process is a continuous, in-line one.

DeClercq teaches that multi-layer coatings may be applied to a substrate using in-line application machines to yield an ink-jet recording medium (6:41-50).

It would have been obvious to one of ordinary skill in the art to modify the process of Miklasiewicz so as to carry-out the coating process as a continuous, automated process, using in-line application machines, as suggested by DeClercq. One of ordinary skill in the art would have been motivated by the desire and expectation of reduced manpower, time, and cost attendant the automation of such a process using coating machines known in the art.

Although none of the cited references explicitly teaches that the coating has the claimed water vapor transmission rate, Miklasiewicz teaches that water penetration into the substrate is prevented by the coating (3:1-10). Absent evidence to the contrary, it is the examiner's position that this teaching reads on a complete blocking of water vapor transmission. In the alternative, the combination of references otherwise teach all of applicant's claimed process, composition,

and arrangement limitations. Therefore, it is the examiner's position that the claimed water vapor transmission rate is an inherent property of the ink-jet recording medium produced by this combination of references. See MPEP 2112.

With specific respect to claim 6, none of the cited references teaches that the continuous, in-line process runs at a speed of at least about 60 feet per minute. It is the examiner's position that the speed at which a continuous, in-line coating speed is run is a result-effective variable effecting the coating speed, coverage, and quality, as well as the overall processing efficiency. Absent clear and convincing evidence of unexpected results demonstrating the criticality of the claimed line speed, it would have been obvious to one of ordinary skill in the art to modify the process of Miklasiewicz in view of DeClercq so as to optimize this result-effective variable by routine experimentation.

With specific respect to claim 8, Miklasiewicz teaches, in a specific example, that the ink-receptive coating comprises gelatin (Example 1). It is the examiner's position that gelatin reads on a water-soluble binder resin. This position is supported by applicant's disclosure of gelatin as a water-soluble binder resin at page 13 of the specification. None of the cited references teaches that the binder is present in about 40% by weight. Generally, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical. Further, it is the examiner's position that the amount of solids in a resin-based coating composition is a result-effective variable effecting coating properties such as flowability and viscosity. Absent clear and convincing evidence of unexpected results demonstrating the criticality of the claimed wt.-%

range, it would have been obvious to one of ordinary skill in the art to modify the process of Miklasiewicz in view of DeClercq so as to optimize this result-effective variable.

With respect to claim 13, none of the cited references teaches that the ink-jet recording medium has a surface gloss less than 20. It is the examiner's position that the surface gloss of an ink-jet recording medium is a physical property readily controlled by the artisan through selection of appropriate process parameters; selection of surface gloss being dictated by, among other things, the particular end-use of the recording medium (a matte finish requires a lower surface gloss, for example). Consequently, absent a showing of criticality of the claimed surface gloss, it would have been obvious to one of ordinary skill in the art to modify the process of Miklasiewicz in view of DeClercq so as to achieve the desired surface gloss required for a particular end-use application of the recording medium.

5. **Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miklasiewicz et al. (US 6,326,415 B1) in view of DeClercq (US 5,672,392 A), as applied to claim 1 above, and further in view of Iqbal (US 5,208,092 A).**

The teaching of Miklasiewicz in view of DeClercq is detailed above and applied here for the same reasons. Neither of these references teaches a step of applying a coating comprising adhesion promoters over the irradiated coating prior to applying the ink-receptive coating.

Iqbal teaches that an adhesion promoting primer layer and/or corona treatment improves the adhesion of an ink-receptive coating to a coated support (6:55-66).

Based on this teaching, it would have been obvious to one of ordinary skill in the art to modify the process of Miklasiewicz in view of DeClercq so as to utilize, either alone or in combination with the corona treatment, an adhesion promoting coating. One of ordinary skill in

the art would have been motivated to do so by the desire and expectation of successfully promoting adhesion between the ink-receptive layer and coated support, as suggested by Iqbal.

6. **Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miklasiewicz et al. (US 6,326,415 B1) in view of DeClercq (US 5,672,392 A), as applied to claim 1 above, and further in view of Nemoto et al. (EP 0 770 493 A1).**

The teaching of Miklasiewicz in view of DeClercq is detailed above and applied here for the same reasons. Neither of these references teaches the claimed binders, explicitly states the wt.-% of the binder, or the coverage of the irradiated coating and the ink-receptive coating.

Nemoto teaches a process for making an ink-jet recording medium similar to that of Miklasiewicz, in which a support, coated with a UV or e-beam cured coating, is over-coated with an ink-receptive coating. The ink-receptive coating comprises a water-soluble binder that may be, for example, polyvinyl alcohol, in amounts encompassing 40 wt.-% (page 7). Further, the irradiated coating and the ink-receptive coating may both weigh 5 to 50 g/m^2 (4:42-47 and 6:8-13, 46-51).

Because Miklasiewicz places no limitation on the composition of the ink-receptive layer, one of ordinary skill in the art would have looked to the prior art for examples of suitable compositions. Consequently, it would have been obvious to one of ordinary skill in the art to modify the method of Miklasiewicz in view of DeClercq so as to utilize, as the ink-receptive coating composition, a composition comprising at least above 40% by weight polyvinyl alcohol, as suggested by Nemoto. One of ordinary skill in the art would have been motivated to do so by the desire and expectation of successfully providing an ink-receptive coating atop the radiation cured layer. Because Miklasiewicz places no limitation on the weight of the coatings, one of

ordinary skill in the art would have looked to the prior art for examples of suitable coating weights. Consequently, it would have been obvious to one of ordinary skill in the art to modify the method of Miklasiewicz in view of DeClercq so as to utilize the radiation cured coating and the ink-receptive coating is the weights suggested by Nemoto. One of ordinary skill in the art would have been motivated to do so by the desire and expectation of successfully providing an ink-jet recording medium.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William P. Fletcher III whose telephone number is (571) 272-1419. The examiner can normally be reached on Monday through Friday, 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WPF 9/22/2004
William P. Fletcher III
Examiner
Art Unit 1762

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